



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,435	09/11/2003	Edmund Arthur Flexman	AD6912 US NA	4884
23906	7590	09/29/2004	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			REDDICK, MARIE L	
		ART UNIT	PAPER NUMBER	
		1713		
DATE MAILED: 09/29/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/660,435	FLEXMAN ET AL.
Examiner	Art Unit	
Judy M. Reddick	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 09/11/03; 12/11/03; 06/24/04.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) 23 and 24 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)              |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/11/03;06/24/04</u> . | 6) <input type="checkbox"/> Other: _____.  |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements filed 12/11/03 & 06/24/04 have been considered and scanned into the application file.

Claim Objections

2. Claims 23 & 24 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 23 & 24 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
  - A) The recited contents governing components (a), (b) and (c) per claims 1, 2, 15, 16 & 18 constitute indefinite subject matter as per it not being readily ascertainable as to the exact entity that said contents are being based on, i.e., total composition, matrix material or else.
  - B) The recited "90 % to 85 % weight %" and "about 5 % to 10 %" per claim 2 constitutes indefinite subject matter as per a) "weight percent" should read "weight" and b) "weight" should be inserted before "the elastomer".
  - C) The recited "comprises a ethylene vinyl acetate (EVA), ethylene methyl acrylate (EMA), ethylene butyl acrylate glycidomethacrylate (EBAGMA)" per claim 5 constitutes indefinite subject matter as per a) "comprises a" should read "comprise an" and b) "hyphens" should separate each monomer unit, e.g., "ethylene-vinyl acetate".
  - D) The recited "preferably" per claims 15 & 19 and "more preferably" per claims 16 and 20 constitute indefinite subject matter as per it not being readily ascertainable as to if or how said objectionable phrases further limit the

claims, i.e., it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

E) The recited "the elastomer" and "the matrix resin" per claim 18 constitutes indefinite subject matter as per the non-express establishment of proper antecedent basis.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-3 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wissbrun et al(U.S. 5,045,607), alone, or further in combination with Tajima et al(U.S. 5,191,011).

Wissbrun et al teach acetal polymer melt blend compositions, useful in forming shaped articles, defined basically as containing a) a major amount (over 50 wt. % and more preferably about 70 to 95 wt. %) of crystalline oxymethylene polymers (homopolymers, copolymers and terpolymers), b) a minor amount (under 50 wt % and more preferably about 30 to 5 wt. %) or a non-crystalline elastomeric copolymer and c) other conventional additives such as fillers, formaldehyde scavengers such as metal oxides and hydroxides which include magnesium hydroxide (sufficient to meet the mineral filler per the claimed invention). See the Abstract, col. 2, lines 59-68, col. 4, lines 3-11, col. 7, lines 35-62, col. 8, lines 13-68 and col. 9, lines 1-3. The disclosure of Wissbrun et al differs basically from the claimed invention as per the silence of a specific amount of "formaldehyde scavenger" and "filler" authorized for use in the antecedently recited melt blend. However, such is a necessary implication that any amount of the conventional additives, including the claimed content of mineral filler, would have been operable within the scope of patentees invention and with a reasonable expectation of success, absent a showing of criticality for such commensurate in scope with the claims.

The discovery that a claimed compound/composition possesses a property not disclosed for in the prior art does not alone defeat a prima facie case of obviousness. *In re Dillon* 16 USPQ2nd 1897 (CAFC, en banc, 1990), which overrules *In re Dillon* 13 USPQ 2nd 1337 and *In re Wright* 6 USPQ 2nd 1959.

The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Alternatively, Tajima et al teach similar such polyacetal compositions made via melt-blending a polyacetal base resin (A) a filler material (B), so as to enhance the properties of the composition, and a thermoplastic acrylic resin (C) in weight ratios which satisfy the following formulas (1)  $(B + C)/(A + B + C) = 0.03$  to  $0.06$  and (2)  $C/(B + C) = 0.05$  to  $0.95$  wherein the filler material is a particulate filler material having a mean particle diameter of between about  $0.05$  to  $50 \mu\text{m}$  which includes mineral fillers such as silicates, carbon

black, kaolin clay, metallic oxides, calcium carbonate, etc. (the Abstract, col. 5, lines 39-68, and Run 3).

Therefore, it would have been obvious to the skilled artisan to employ, as the filler material of Wissbrun et al, the aforementioned mineral fillers, in a content falling within the scope of the claims, and with a reasonable expectation of enhancing the acetal polymer blend composition of Wissbrun et al, i.e., a reasonable expectation of success.

Claim Rejections - 35 USC § 103

9. Claims 1-3 & 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wissbrun et al(U.S. 5,045,607), alone, and further in combination with JP 01170641(English Translation).

The disclosure of Wissbrun et al is relied upon for all that it teaches as stated in the Grounds of Rejection supra as applied to claims 1-3 & 7-13.

Further, The disclosure of Wissbrun et al differs basically from the claimed invention as per the silence of a specific amount of "formaldehyde scavenger" and "filler" authorized for use in the antecedently recited melt blend. However, such is a necessary implication that any amount of the conventional additives, including the claimed content of mineral filler, would have been operable within the scope of patentees invention and with a reasonable expectation of success, absent a showing of criticality for such commensurate in scope with the claims.

The discovery that a claimed compound/composition possesses a property not disclosed for in the prior art does not alone defeat a prima facie case of obviousness. *In re Dillon* 16 USPQ2nd 1897 (CAFC, en banc, 1990), which overrules *In re Dillon* 13 USPQ 2nd 1337 and *In re Wright* 6 USPQ 2nd 1959.

The fact that appellant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

As to claim 14, JP'641 teaches similar such compositions, useful for forming shaped articles, comprising at least a polyacetal resin and 1 to 100 parts by weight of a surface treated, mineral filler, so as to enhance

various mechanical properties of the compositions, having an average particle diameter of 0.05 to 10  $\mu\text{m}$  wherein the mineral filler includes an oxide, hydroxide, carbonate, silicate and sulfate of a Group II or a Group III metal such as calcium carbonate and wherein a C12 to C30 fatty acid or salt thereof is used as the surface treatment agent. Therefore, it would have been obvious to the skilled artisan to use the surface treated mineral filler of JP'641, as the filler of Wissbrun et al, and with a reasonable expectation of enhancing the properties of the acetal polymer melt-blend composition of Wissbrun et al, i.e., with a reasonable expectation of success. See pages 3-8 and 12.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-9, 12 & 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Guest et al(U.S. 5,244,946).

Guest et al teach compositions comprising a melt blend of (i) from about 5 to about 98 parts by weight of a monovinylidene aromatic copolymer, (ii) from about 1 to about 94 parts by weight of a crystalline acetal polymer (homopolymer or copolymer) which includes Ultraform N2320, (iii) from about 1 to about 50 parts

by weight of an elastomeric polymer such as thermoplastic polyurethanes and copolyester elastomers and (iv) from about 5 to about 80 weight percent of particulate or fibrous inorganic mineral fillers such as fibers of glass, mica, titanium oxide, potassium titanate, etc. and (v) other conventional additives which include mineral fillers such as glass beads and mica (the Abstract, col. 3, lines 12-44, col. 4, lines 21-44, col. 7, lines 27-68, col. 8, lines 1-40, col. 11, lines 33-39, col. 13, lines 10-68, col. 14, lines 1-14, the Runs and Claims).

Guest et al therefore anticipate the instantly claimed invention with the understanding that the composition of Guest et al overlaps in scope with the claimed invention.

Even if it turns out that the Examiner has somehow missed the boat and the claims are not anticipated by the disclosure of Guest et al, it would have been obvious to the skilled artisan to extrapolate, from the disclosure of Guest et al, the precisely defined composition, as claimed, as per such having been within the purview of the general disclosure of Guest et al and with a reasonable expectation of success, absent a showing of unexpected results commensurate in scope with the claimed invention.

#### Claim Rejections - 35 USC § 103

13. Claims 10, 11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guest et al(U.S. 5,244,946) in combination with Kielhorn-Bayer et al(U.S. 5,859,146).

Guest et al is relied upon for all that is taught as stated in the Grounds of Rejection supra as applied to claims 1-9, 12 & 13.

The disclosure of Guest et al differs basically from the claimed invention as per the specifically recited filler as defined per claims 10, 11, 15 and 16.

Bayer et al teach similar thermoplastic molding materials defined basically as containing (A) from 10 to 99.5 wt. % of a thermoplastic polymer that includes polyoxymethylenes, polystyrene, etc. (B) from 0.5 to 80 wt. % of a thermoplastic polyurethane which includes polyurethane elastomers, (C) from 0 to 50 wt. %, preferably up to 40 wt. % of a fibrous or particulate filler which includes mineral fillers such as potassium titanate

whiskers, glass fibers, calcium carbonate, glass beads etc. and (D) 0 to 30 wt. % of other conventional additives such as formaldehyde scavengers, plasticizers, lubricants, etc. (the abstract, , col. 4, lines 64-67 and col. 9, lines 3-67).

Therefore, it would have been obvious to the skilled artisan to use a mineral filler such as calcium carbonate, taught as an equivalent to mineral fillers disclosed in Guest et al, as the filler of Guest et al and with a reasonable expectation of success, absent a showing of criticality for such commensurate in scope with the claims.

As to the limitations per claim 14, the interchangeability of one well known mineral filler material for another is a matter of ordinary choice to the skilled artisan, absent some evidence of unusual or unexpected results.

As to the limitations per claim 17, the polyoxymethylene and the polystyrene are recognized as equivalents in scope per Bayer et al(Abstract) therefore, it would have been obvious to the skilled artisan to swap the polystyrene, taught as an equivalent, for the polyoxymethylene (acetal polymer) of Guest et al and with a reasonable expectation of equivalent results and with the understanding that the polyoxymethylene and polystyrene are reasonably presumed to possess crystalline properties since they are essentially the same as the claimed crystalline acetal polymer and polystyrene.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takahashi et al(U.S. 4,692,480).

Takahashi et al teach thermoplastic resin compositions defined basically as containing a melt blend of a) a thermoplastic resin which includes organic polymeric material having a crystalline structure such as polyacetal (homopolymer or copolymer), aromatic polyesters such as polybutylene, polyethylene and polypropylene terephthalates, polystyrene, etc.(Abstract, col. 1, lines 47-68 and col. 2, lines 1-22), b) 1 to 60 wt. % of a spherical hollow mineral filler material (treated or untreated) having a mean particle diameter of less than 500  $\mu\text{m}$  and preferably from 1 to 200  $\mu\text{m}$  composed of silicate and preferably in the form of spherical hollow glass beads(col. 2, lines 23-68) wherein the spherical hollow filler material is preferably treated with a surfacing agent such as epoxy-based, silane-based and titanate-based materials (col. 3, lines 3-11). Takahashi et al further specifically teach that other conventional adjutants may be added to the composition which include particulate additives such as calcium carbonate, etc.( col. 3, lines 12-34). Takahashi et al further specifically teach that it is possible to also add one or more kinds of organic polymers to the composition which include rubber-like polymer materials such as polyurethane, copolyesters, polyacrylate resins, etc. (col. 3, lines 35-46). Takahashi et al further exemplify extruded thermoplastic resin compositions which comprise at least polybutylene terephthalate & spherical hollow glass filler (Runs 3 and 4) and polyacetal and spherical hollow glass filler (Runs 10 & 11). Takahashi et al further teach a thermoplastic resin composition comprising 40 to 99 wt. % of a thermoplastic resin having a crystalline structure that includes polyacetal, polyester and polystyrene and 1 to 60 wt. % of spherical hollow filler governed by a particle diameter of 500  $\mu\text{m}$  or smaller (Claims). Takahashi et al therefore anticipate the instantly claimed invention with the understanding that one having ordinary skill in the art would have readily

envisioned the use of a rubber-like polymer in the Runs 3, 4, 10 and 11, in contents falling within the scope of the invention, as claimed, following the antecedently recited guidelines.

It has been held that where applicant claims a composition in terms of function, property or characteristic where said function is not explicitly shown by the reference and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. In re Best, 195 USPQ 430, 433 (CCPA 1977); In re Fitzgerald et al., 205 USPQ 594, 596 (CCPA 1980).

When the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon applicant to provide clear and convincing factual evidence that the respective products do in fact differ in kind - In re Brown, 59 CCPA 1063, 173 USPQ 685 (1972); In re Fessman, 180 USPQ 324 (CCPA 1974) - and to come forward with evidence establishing unobvious differences between the claimed product and the prior art product. In re Marosi 218 USPQ 289.

Even if it turns out that the Examiner has somehow missed the boat and the claims are not anticipated by the disclosure of Takahashi et al, it would have been obvious to the skilled artisan to extrapolate, from Takahashi et al, the precisely defined composition, as claimed, as per such having been within the purview of the general disclosure of Takahashi et al and with a reasonable expectation of success.

#### Conclusion

17. The additional prior art, listed on the attached FORM PTO 892, is cited as of interest in teaching compositions similar to those as claimed and considered merely cumulative to the prior art supra.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judy M. Reddick whose telephone number is (571)272-1110. The examiner can normally be reached on Monday-Friday, 6:30 a.m.-3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Judy M. Reddick*  
Judy M. Reddick  
Primary Examiner  
Art Unit 1713

JMR *JMR*  
09/24/04